Metropolitan University, Sylhet

Department of Computer Science and Engineering
Class Test for Spring Term Examination – 2021
Program: B.Sc. in CSE **Batch:** 49th, 50th(A+B)
Course: CSE-231:: Algorithm

★ Submit a **PDF** file for the assignment containing your answer.
- Answers can be either handwritten or typed.

★ **Assignment File Name**: **201**-115-**ZZZ**_Algo_Assign_CT
- Replace **ZZZ** with your roll.
- If you are a retake student then replace the first part of the assignment file corresponding to your roll number.

★ If you have any queries, comment, or inform your CR.

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1 Suppose, Penny went to Leonard's house as she is out of things to cook. So, she wanted to borrow things from Leonard. As Leonard is a good friend and neighbor so he would not forbid her from taking anything. But, Penny brought a bag of weight **15kg**. As she knows Leonerd won't ask to return her any of the things as he likes her. So, she mostly wants to take the things as much as she can which are high priced. Because then she would not have to spend much money and also it's kind of end of the month. Moreover, she doesn't have to take the whole portion of a thing. She can take any amount or fraction of that thing. Here Pi and Wi denote the price and weight of the ith product respectively. Now calculate what items Penny might take so that her bag would contain maximum priced items and what's the final total price of the thing she borrowed. Show the calculation. **10**

Wi	4	6	8	5	7	3
Pi	36	66	96	40	56	81

2. Consider the following 11 activities with their starting and finishing time. Now find suitable activities using the greedy **Activity Selection** algorithm. **10**

Start Time	0	3	3	5	6	5	1	12	2	8	8
Finish Time	6	5	8	7	10	9	4	14	13	12	11

You have to select as many activities as possible without them being overlapped where your most of the time are utilized. But again the total number of selected activities should be maximum where none are overlapping with each other.